

ATTACHMENT - REMARKS

Claim 1-22 are pending in the present application. By this Amendment, Applicants have amended claims 1-22 and cancelled claim 23. Applicants respectfully submit that the present application is in condition for allowance based on the discussion which follows.

The drawings were objected to under 37 C.F.R. § 1.83(a) for allegedly failing to show the claimed feature "parallel air streams." By this Amendment, Applicants have amended claim 1 to remove reciting the "parallel air streams." Accordingly, as amended, Applicants respectfully submit that the drawings are in compliance with the requirements of 37 C.F.R. § 1.83(a) for showing all claimed features. Applicants respectfully request that the objection to the drawings be withdrawn.

Claims 1-23 were rejected under 35 U.S.C. § 112, first paragraph (enablement requirement). Specifically, it was alleged that the subject matter was not described in the present specification in a way to enable one of ordinary skill in the art to practice the invention as claimed. It was alleged that, based on the claimed air supply having "the shape of parts of a circle or substantially a circle or primarily parts of a circle or substantially a circle" and "and uniformly distributed partial air streams characterized by parallel air streams," it is not physically possible for the air streams to be parallel.

Applicants respectfully submit that in view of the amendments to claim 1, which removed reference to the "parallel air streams," claim 1 is in full compliance with the enablement requirements of 35 U.S.C. § 112, first paragraph. Accordingly, Applicants respectfully submit that all claims are in full compliance with the requirements of

35 U.S.C. § 112, first paragraph. Therefore, Applicants respectfully request that the rejection to the claims under 35 U.S.C. § 112, first paragraph be withdrawn.

Claims 1-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kristenson, U.S. Patent No. 5,167,577 (hereinafter "Kristenson") in view of German Patent DE 2608792 (hereinafter "DE '792"). In the rejection, the Examiner first alleges that the air supply device described in DE '792 teaches rectilinear air jets and that it would have been obvious to modify the air supply device of Kristenson to incorporate the rectilinear air jets of DE '792 in order to reduce exhaust velocity. The Examiner then concludes that the specification of DE '792 describes that its air supply device produces a laminar air flow.

Contrary to the prior art rejection, Applicants respectfully submit that the present air supply device is novel and non-obvious from DE '792, individually or in combination with Kristenson. As will be apparent from the following discussion, the combined teachings of the cited art fail to teach or make obvious the claimed air supply device "wherein the air flow generated through said permeable body is substantially laminar," as claimed.

Submitted with this Amendment is a Rule 132 Declaration of Professor Holmberg (hereinafter "Holmberg Dec."), which includes a certified translation of the claims from DE '792 in Exhibit B to the Holmberg Dec. Applicants previously submitted a certified English translation of the specification of DE '792 and have attached a copy in Exhibit B to the Holmberg Dec.

Referring specifically to the Holmberg Dec., the mechanism whereby the present air supply device achieves "reduction of exhaust velocity" is unrelated to the mechanism

whereby the device described in DE '792 achieves "reduction of exhaust velocity." The device in DE '792 "reduces exhaust velocity" by means of air jets that have an air inlet with a smaller aperture than the air outlet aperture. As a result of this difference in aperture size, the "expanding jets," which are "conical," having a cone angle of less than 15°, "reduce exhaust velocity" according to the relationship $v_2 = v_1 \cdot r_1 / (\text{inlet aperture})^2 / r_2 (\text{outlet aperture})^2$. In contrast, the air supply device of the present invention achieves a flow velocity that is determined solely by the under-temperature (i.e. cooling) of the supply air. This effect is facilitated by the shape of the air supply nozzle.

The claimed air supply device is an improvement over the prior art device of Kristenson, in that the prior art device discharged air streams in different directions, causing undesired turbulence. See present specification, page 1, lines 7-11. The rectilinear air jets of the claimed device provide a directional effect that helps minimize the turbulence zone associated with discharge of clean air from the device. See present specification, page 1, lines 10-22.

As is explained in the Declaration of Professor Holmberg, the device described in DE '792 could not possibly produce a laminar air flow (Holmberg Dec., ¶¶ 10-12). In the device described in DE '792, the turbulence zone associated with discharge of clean air from the device is actively increased by the "protection layer made of wire mesh." See DE '792, figure 1, and translated specification, page 3, lines 22-26; and the Holmberg Dec., ¶¶ 10-12. This "protection layer of wire mesh," which very clearly increases turbulence and eliminates any possibility of laminar flow, was considered so important by the inventors of the DE '792 device that it is included as a claim element. See translated claim 1 in Exhibit B of the Holmberg Dec.

As is explained in the declaration of Professor Holmberg, the device described by DE '792 does not comprise rectilinear air jets. The air jets are "conical," with an angle of less than 15°. As explained above, the mechanism whereby this device achieves "reduction of exhaust velocity" is because the outlet aperture of the air jets is larger than the inlet aperture. The "expanding jets" of DE '792 could not possibly be rectilinear (i.e. having the property that all edges meet at 90° angles). If the air jets of the DE '792 device were rectilinear, they would not be able to achieve any "reduction in exhaust velocity" according to the relationship $v_2 = v_1 \cdot r_1^2 / r_2^2$, as described in DE '792, since r_1^2 would be equal to r_2^2 .

Applicants respectfully submit that the device described by DE '792 does not comprise "rectilinear" air passages, does not teach or suggest that "exhaust velocity" can be reduced to a temperature-limited flow by employing a nozzle shape with a short pitch length, and could not possibly produce a substantially laminar air flow. As explained in the declaration of Professor Holmberg, the specialty case of $r_1 = r_2$ (i.e. a conical angle of 0°) is a non-working embodiment of DE '792. The suggestion that it is obvious for the skilled person to specifically choose from an infinity of conical angles the single embodiment of DE '792 that does not function, combine this embodiment with the teaching of Kristenson, in order to obtain improved air-flow control, is without reason. In other words, there fails to be any apparent reason which would have led one of ordinary skill in the art to select a conical angle of 0°—one would have seen no benefit from making such a selection. Accordingly, the claimed device could not be obvious in light of DE '792. Applicants, accordingly, request that the obviousness rejection be withdrawn.

In conclusion, Applicants respectfully submit that DE '792 does not teach or in any way make obvious rectilinear air passages. Further, Applicants respectfully submit that DE '792 does not teach or in any way make obvious that exhaust velocity can be reduced to a temperature-limited flow by deploying a nozzle shape with a short pitch length. Moreover, the device described in DE '792 could not produce a substantial laminar air flow since its "protection layer of wire mesh" would necessarily introduce turbulence.

Based on the foregoing, Applicants respectfully request that the rejection to claims 1-22 under 35 U.S.C. § 103(a) based on Kristenson, in view of DE '792, be withdrawn.

Claims 1-23 were further rejected under 35 U.S.C. § 103(a) as being unpatentable over Kristenson and DE '792, further in view of U.S. Patent Application Publication No. 2002/0064038 (hereinafter "Kummerfeld"). In the rejection, the Examiner alleged that Kummerfeld teaches a flat bottom surface of an air supply that produces parallel air streams and that it would have been obvious to combine Kummerfeld's teachings with that of DE '792 and Kristenson. Contrary to the Examiner's assertion, Applicants respectfully submit that, as amended, the claims no longer refer to "parallel air streams," and in view of the foregoing discussion with regard to the former prior art rejection, Applicants respectfully request that this 35 U.S.C. § 103(a) rejection based on Kristenson and DE '792, further in view of Kummerfeld, be withdrawn.

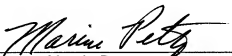
Finally, by this Amendment, Applicants have amended the specification to correct a clear, apparent clerical error. Accordingly, the amendment to the specification does not constitute new matter.

In view of the foregoing, Applicants respectfully submit that the present application is in condition for allowance. Should the Examiner come to a contrary conclusion, the Examiner is invited to call the undersigned at the number listed below.

Respectfully submitted,

Date: March 1, 2010

Signed By
Attorney of Record


Name: Marvin Petry
Registration No.: 22,752

STITES & HARBISON PLC ♦ 1199 North Fairfax St. ♦ Suite 900 ♦ Alexandria, VA 22314
TEL: 703-739-4900 ♦ FAX: 703-739-9577 ♦ CUSTOMER NO. 881